Background and Objectives

- Most frequent pituitary tumour: microprolactinomas
- Bilateral hyperplasia (Bilateral)
- Co-existing prolactinoma-PA infrequently reported

Results

1. Increased incidence of prolactinomas and notably macroprolactinomas in primary aldosteronism patients

   - Increased incidence of macroprolactinomas in co-existing prolactinoma-PA compared to normal population
   - Increased incidence of macroprolactinomas compared to normal population
   - Predominance of macroprolactinomas over microprolactinomas co-existing with PA consistent with putative role for elevated prolactin levels in PA

2. The prolactin receptor gene is upregulated in APA compared to normal adrenals

   - High prolactin concentrations stimulate CYP11B2 gene expression and aldosterone production in NCI H295R adrenal cells

3. High prolactin concentrations stimulate CYP11B2 gene expression and aldosterone production in NCH295R adrenal cells

Summary and Conclusions

- Increased incidence of prolactinomas in Munich-Turin PA cohort compared to normal population
- Increased expression of prolactin receptor gene expression in APA compared to normal adrenals
- Increased expression of CYP11B2 and aldosterone production in adrenal cell line

Evidence for a direct role of high levels of prolactin on aldosterone production and a putative pathophysiological link between hyperprolactinemia/prolactinoma and PA.